

CLAIMS

12(currently amended). Apparatus for retrieving re-usable water from an intimate water/oil -contaminated mixture, said apparatus having a cross-flow filter module comprising a ceramic membrane filter tube mounted coaxially within a cylindrical housing to permit the passage of substantially oil-free water as a permeate through the filter module; pumping means to circulate said contaminated mixture through said module at a predetermined flow rate sufficient to substantially resist deposition of contaminants and to scour a surface membrane portion of said filter module; ~~permeate accumulation~~ said housing surrounding said filter module to provide a limited collector space of substantially minimal volume for permeate collection, and to receive a predetermined limited quantity of chemical cleaning solution in back- filling relation with said limited space, and drain means to receive said permeate for disposal, and cleaning solution storage means having a plurality of individual chemical cleaning solution tanks, manifold means interconnecting elements of said apparatus; and control means including solenoid actuated valves connected with said apparatus elements and said manifold means, in use to drain said permeate from said module, and to admit said predetermined limited quantity of a selected said cleaning solution from said storage means to said module in back-flushing relation with said surface membrane portion of the module, for frequent and regular cleaning cycles, wherein, in use the concentration of oil within said contaminated mixture is progressively increased to a predetermined optimum practical limit.

13. (cancelled) The apparatus as set forth in Claim 12, including cleaning solution storage means, manifold means interconnecting elements of said apparatus; and control means

including solenoid actuated valves connected with said apparatus elements and said manifold means, in use to drain said permeate from said module, and to admit cleaning solution from said storage means to said module in back-flushing relation with said surface membrane portion of the module.

14(currently amended). The apparatus as set forth in Claim 12, said filter module having a central tube incorporating said surface membrane portion, ~~an~~ said outer housing in radially spaced relation from said tube, forming ~~an~~ said limited annular collector space therebetween, sealing ring means located adjacent the ends of said central tube in interposed sealing, supporting relation between said tube and said pipe, and an end fitting secured in sealing relation with the end of said housing to enable the flow of said contaminated mixture through said end fitting and through said tube.

15(original). The apparatus as set forth in Claim 14, said sealing ring means at each end of said tube having two O-ring seals in mutual axially spaced relation.

16(currently amended). The apparatus as set forth in claim 12, including compressed air means connected to said permeate accumulation means, said solenoid control valves including a normally closed and biased-open control means valve to admit compressed air in compressing relation with said permeate, upon de-energization of said normally closed valve, in use to create a back-flushing motion of said permeate through said filter surface membrane.

17. (currently amended) The apparatus as set forth in Claim ~~13~~ 12, wherein said apparatus is mounted within a cabinet, including computerized control means in programmed controlling relation with the apparatus.

18(original). The apparatus as set forth in Claim 17, wherein said cabinet contains two

said processing loops mounted in back-to-back relation, and pivot means enabling the reversal of said modules, to facilitate access thereto for purposes of servicing.

19(original). The apparatus as set forth in Claim 17, said computerized control means serving a plurality of said filter modules in individual liquid filtering and filter cleaning modes of operation of the apparatus.

20(cancelled). The apparatus as set forth in Claim 12, said permeate accumulation means having a substantially minimal volume, to minimize the volume of cleaning liquid required to fill said permeate accumulation means, for purposes of cleaning said filter module by back-flushing with said cleaning liquid.